

ABSTRACT

The present invention provides polynucleotides and related polypeptides of the enzyme APAO isolated from *Exophiala spinifera* and *Rhinocladiella atrovirens*. The polynucleotides may be mutated to remove glycosylation sites and cysteine residues.

5 Additionally, the present invention provides recombinant expression cassettes, host cells, transgenic plants, and transgenic seed. The present invention also provides for polynucleotides containing both APAO and a fumonisin esterase. In addition, the present invention provides methods for producing the APAO enzyme in both prokaryotic and eukaryotic systems, methods for detecting fumonisins, and methods for identifying

10 transformed plant cells. Methods for degrading fungal toxins in plants, grain, grain processing, silage, food crops and in animal feed are also disclosed.